

**REMARKS**

Reconsideration of the present application is respectfully requested.

Applicant has amended the specification to correct minor translation errors and to remove phraseology that is more appropriate as claim language. Applicant respectfully asserts that no new matter has been added.

The title of the present application has been objected to as being not descriptive. Accordingly, Applicant has amended the title to be more descriptive of the present invention.

Claims 1, 2, 4, 5 and 10 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,362,931 to Maruko et al. (Maruko) in view of U.S. Patent No. 5,072,105 to Osawa. Applicant respectfully traverses this rejection.

The solar sensor of the present invention includes a housing 2, optical devices 3, 4, an optical lens 5 that defines a concavity, a lens member 6 and terminals 7. The optical lens 5 guides incident light thereon to the optical devices 3, 4, which are respectively positioned to the right and the left of an axis parallel to the direction of travel of the vehicle. The lens member 6 is for further guiding the incident light to the optical devices 3, 4 and is positioned between the optical devices 3, 4 and the optical lens 5. The lens member 6 includes a pair of projections 15, 16 that are respectively disposed above the optical devices 3, 4 and substantially in a space defined by the concavity of the optical lens 5.

The Examiner should note that claim 1 was amended in a previous amendment to recite the novel embodiment disclosed, for example, on page 6, lines 10-12 and 20 - 22. Specifically, claim 1 was amended to recite that the pair of projections are respectively disposed above the optical devices and substantially in a space defined by the concavity of the concave optical lens.

This amendment further defined the structural positioning of the pair of projections with respect to the optical lens and the optical devices.

Maruko discloses a sun following-up device for a solar heat utilization device. The sun following-up device includes fish eye lenses 1, 1' laid one above the other on top of a hollow cylindrical member 2 and a casing 7 positioned under the cylindrical member 2. The casing 7 includes a screen glass 8 and photosensitive cells 10, 10' disposed on the undersurface of the screen glass 8 (see Col. 4, Lines 44 – 68 and Col. 5, Lines 1 – 17). However, Maruko fails to teach or suggest that the lens member 2 includes a pair of projections 15, 16 respectively disposed above the photosensitive cells 10, 10' (optical devices) and substantially in a space defined by a concavity of the fish eye lens 1 (optical lens).

The Examiner has alleged that the fish eye lens 1' and the image formation adjusting lens 5 (projections) are disposed substantially by a concavity of the fish eye lens 1 (concave optical lens) (see page 6, line 18 - page 7, line 1). More particularly, the Examiner stated that the fish eye lens 1' (projection), which is a part of the cylindrical member 2 (lens member), partially resides within the confines of the concavity of the fish eye lens 1 (concave optical lens). However, as shown in Fig. 1 of Maruko, the cylindrical member 2 is disposed below the fish eye lens 1 and outside of the space defined by the concavity of the fish eye lenses 1. Therefore, the alleged projections 1', 5 are not disposed substantially in the space defined by the concavity of the lens 1 as recited in claim 1.

Osawa discloses a solar sensor that includes a housing 42 and optical devices 29, 30 and 31 disposed thereon. However, Osawa also fails to teach or suggest a lens member comprised of a pair of projections respectively disposed above a pair of the optical devices and substantially in

a space defined by a concavity of an optical lens. Rather, Osawa describes only how the outputs of the optical devices 29 – 31 are used to determine characteristics of the light incident thereon.

Therefore, because Maruko and Osawa fail to teach or suggest a solar sensor including a lens member comprised of a pair of projections that are respectively disposed above a pair of optical devices and substantially in a space defined by a concavity of a concave optical lens, Applicant respectfully requests that the rejection of claim 1 under 35 U.S.C. §103 be withdrawn.

Claims 2, 4, 5 and 10 depend from claim 1. Therefore, the rejection of these claims should be withdrawn for the above-mentioned reasons with respect to claim 1.

Further regarding claim 2, Maruko and Osawa fail to teach or suggest a first clearance between the concave optical lens and each of the pair of projections in the direction of travel of the vehicle that is greater than a second clearance between the concave optical lens and the pair of projections in a direction perpendicular to the direction of travel on a horizontal plane.

The Examiner has alleged that it would have been obvious to one of skill in the art to maintain a clearance between the lenses in a horizontal or vertical direction in the solar sensor of Maruko in view of Osawa to save space and be able to attach the sensor in the smallest possible area to render it inconspicuous in a vehicle (see page 3, line 13 - page 3, line 1).

Applicant respectfully asserts that, contrary to the Examiner's allegation, the structure recited in claim 2 regarding the first and second clearances is not for saving space or for making the sensor inconspicuous. Rather, the structure as recited in claim 2 provides the unexpected and superior results of equalizing the total amount of incident light to the projections and therefore the total amount of incident light that reaches the left and right optical devices (see page 2, line 16 - page 3, line 3). With the goal of minimization of the size of the overall solar sensor, one skilled in the art provided with the Maruko and Osawa references would likely produce a quite

different solar sensor that might, for example, have equal first and second clearances or a first clearance that is smaller than a second clearance, wherein the first clearance is defined to be between a concave optical lens and a pair of projections in the direction of travel and the second clearance is defined to be between the concave optical lens and the pair of projections in a direction perpendicular to the direction of travel. Therefore, the affirmative limitation of the first clearance being greater than the second clearance therefore patentably distinguishes the present invention from the cited references.

Claim 6 has been rejected under 35 U.S.C. §103 as being unpatentable over Maruko in view of Osawa as applied to claim 1, further in view of U.S. Patent No. 5,483,060 to Sugiura et al. (Sugiura). Applicant respectfully traverses this rejection.

As discussed above in connection with claim 1, Maruko and Osawa, considered individually or in combination, fail to teach or suggest a lens member including a pair of projections that are respectively disposed above the optical devices and substantially in a space defined by a concavity of a concave optical lens.

Sugiura discloses an optical position sensor 1 that includes a detection portion 10 disposed with the housing. The detection portion 10 includes a film 24 disposed above a pair of optical devices 26X, 26Y. However, Sugiura fails to teach or suggest a lens member including a pair of projections respectively disposed above optical devices and substantially in a space defined by a concavity of an optical lens.

The Examiner has alleged that the film 24 of Sugiura includes projections 24a, 24b. In a previous Amendment, Applicant respectfully asserted that the alleged projections are actually slits (see Col. 4, Lines 55 – 59) and pointed out that the slits 24a, 24b obviously do not stick out from a surface. In the current Office Action, the Examiner has alleged that slits are projections,

since the slit is external to the substrate and sticks out from the glass substrate 22 as opposed to being indented into the substrate 22. Applicant agrees that, as shown in Fig. 1A, the slit 24a is not indented into the substrate 22 (lens member), but Applicant reminds the Examiner that as recited in claim 1, the lens member comprises the pair of projections, and that the Examiner has characterized the light shading film 24 as the lens member (see page 4, line 9 of the present Office Action). The slit 24a is indeed "indented" into and therefore does not project out from, the film 24. Therefore, the Applicant maintains the position that the slits 24a, 24b are not projections.

In addition, Sugiura fails to teach or suggest that the slits 24a, 24b are disposed substantially in a space defined by a concavity of a concave optical lens, as recited in claim 1, from which claim 6 depends.

Therefore, because Sugiura does not cure the deficiencies of Maruko and Osawa by failing to teach or suggest a lens member includes a pair of projections respectively disposed above optical devices and substantially in a space defined by a concavity of an optical lens, Applicant respectfully requests that the rejection of claim 6 under 35 U.S.C. 103(a) be withdrawn.

Claim 7 has been rejected under 35 U.S.C. §103 as being unpatentable over Maruko in view of Osawa as applied to claim 1, and further in view of U.S. Patent No. 4,332,239 to Hotine et al. (Hotine). Applicant respectfully traverses this rejection.

As discussed above in connection with claim 1, Maruko and Osawa fail to teach or suggest a lens member including a pair of projections that are respectively disposed above optical devices and substantially in a space defined by a concavity of a concave optical lens.

Hotine discloses a solar ray reflector including hooks 73, which are used in conjunction with a spring 69, a catch 70, a cam 72 and an annular ring 63 to provide sufficient energy to push a clutch member 75 and drive a rod 74 downward.

Applicant respectfully asserts that there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the teachings of Hotine with those of Maruko and Osawa, as Hotine is not analogous to the present invention. In order for the Examiner to rely on a reference as a basis for an obvious rejection, the reference must be analogous to the applicant's invention. The reference is analogous if it is in the field of applicant's endeavor or, if not, is reasonably pertinent to the particular problem with which the inventor was concerned. (See *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992), MPEP 2141.01(a) Rev. 1, Feb. 2000.)

Hotine and the present invention are in different fields of endeavor. Hotine discloses a sun powered automatic sun following reflector. In operation, while the reflector is stationary and facing the sun, the sun's image travels across the surface of a fixed heat exchanger to heat water for an external water system (see col. 4, lines 22-26). The present invention is related to a solar sensor for providing a constant total output of optical devices (see page 2, lines 8-10 of the present application). The Hotine references is therefore not in the field of Applicant's endeavor nor reasonably pertinent to the particular problem with which the inventors of the present application were concerned.

Even assuming arguendo that motivation exists to combine the Hotine, Maruko and Osawa references, Hotine does not cure the deficiencies of the combination of Maruko and Osawa. Specifically, Hotine fails to teach or suggest a lens member comprised of a pair of

projections that are respectively disposed above optical devices and substantially in a space defined by a concavity of a concave optical lens.

Therefore, since there is no motivation to combine the teachings of Hotine with the teachings of Maruko and Osawa and because Hotine does not cure the deficiencies of Maruko and Osawa by failing to teach or suggest a lens member comprised of a pair of projections respectively disposed above optical devices and substantially in a space defined by a concavity of an optical lens as recited in claim 1, from which claim 7 depends, it is respectfully requested that the rejection of claim 7 under 35 U.S.C. 103(a) be withdrawn.

Claims 8 and 9 have been rejected under 35 U.S.C. §103 as being unpatentable over Maruko in view of Osawa as applied to claim 1, and further in view of U.S. Patent No. 5,022,725 to Matsunami et al. (Matsunami). Applicant respectfully traverses this rejection.

Maruko and Osawa do not teach or suggest a lens member comprised of a pair of projections that are respectively disposed above optical devices and substantially in a space defined by a concavity of the concave optical lens as discussed above in connection with claim 1, or that the pair of projections are further for enabling a total output of the pair of optical devices to be substantially constant irrespective of a solar azimuth angle.

Matsunami discloses an optical sensor for obtaining a nearly uniform amount of light rays at an optical sensor element 8 (optical device) regardless of the incident angles of the light. The optical sensor as disclosed by Matsunami includes one convex lens 29 (projection). However, Matsunami fails to teach or suggest two projections and/or two optical devices.

The Examiner has alleged that it would have been obvious to one of ordinary skill in the art to use the concave lens and projection of Matsunami in the invention of Maruko and Osawa to extend the maximum detection angle for sunlight in a vehicle to obtain accurate solar readings

during sunrise and sunset periods (see page 5, lines 14-17 of the present Office Action).

However, Applicant respectfully asserts there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. (See In re Vaeck, 947 F.2d 488 (Fed. Cir. 1991), cited in MPEP 2142, Aug. 2001.) Specifically, as discussed above, the Maruko and Osawa references fail to teach or suggest a pair of projections that are disposed substantially in a space defined by a concavity of a concave optical lens and are respectively disposed above optical devices that are disposed on a right and a left side of an axis parallel to a direction of travel of a vehicle. Therefore, one skilled in the art would not look to Matsunami, which discloses a single convex lens within a concave lens and does not teach or suggest using plural convex lenses, to cure the deficiencies of the Maruko and Osawa references.

In addition, Applicant reminds the Examiner that, pursuant to MPEP §2145 (X), the Examiner cannot pick and choose among references using hindsight based on knowledge that was gleaned from Applicant's disclosure. The Examiner has clearly used hindsight in the present rejection, as there is no motivation to combine the Matsunami reference with the Maruko and Osawa references, absent information gleaned from the present application.

Therefore, because there is no motivation to combine Matsunami with Maruko and Osawa, Applicant respectfully requests that the rejection of claims 8 and 9 under 35 U.S.C. 103(a) be withdrawn.

A petition for a two-month extension of time along with a check for the requisite fee is being submitted concurrently with the present amendment. Although no additional fees are believed to be due, permission is given to charge any additional unforeseen fees to Deposit Account 50-1147.



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In view of the above amendments and remarks, the present application is now believed to be in condition for allowance. A prompt notice to that effect is respectfully requested.

Respectfully submitted,



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